REMARKS

Claims 1-3, 5, 7-17, 19-25 and 27 are pending.

Claims 4, 6, 16, 18, 26 and 28-29 have been cancelled.

In the Office Action dated February 4, 2009, claims 1-3, 5-12 and 25 were rejected under 35 U.S.C. § 101; claims 1-3, 5-7, 10-15, 17-19 and 22-25 were rejected under 35 U.S.C. § 103(a) as unpatentable over "Motion-based Segmentation Using a Threshold Merging Strategy on Watershed Segments" (de Smet) in view of "K-Harmonic Means-A Data Clustering Algorithm" (Zhang); claims 8, 9, 20 and 21 were rejected under 35 U.S.C. § 103(a) as unpatentable over de Smet in view of Zhang and further in view of "A Video Segmentation Algorithm for Hierarchical Object Representations and its Implementation" (Hermann); and claims 27 and 29 were rejected under 35 U.S.C. § 103(a) as unpatentable over de Smet in view of Zhang and in view of U.S. Patent No. 6,084,912 (Reitmeier).

REJECTION UNDER 35 U.S.C. § 101

To address the § 101 rejection of independent claim 1, language in ¶ [0088] of the present specification identified by the Office Action has been deleted. Therefore, it is believed that the § 101 rejection has been overcome.

Independent claim 25 has been amended to tie the method of claim 25 to a machine or apparatus, in this case "processor." Therefore, it is respectfully submitted that the § 101 rejection of claim 25 has been overcome.

Withdrawal of the § 101 rejection is respectfully requested.

REJECTION UNDER 35 U.S.C. § 103

Independent claim 1 has been amended to recite that the K regression functions are recalculated based on at least the membership probabilities. Support for this amendment can be found in equation (13) of the specification in ¶ [0075].

Claim 1 has also been amended to recite determining whether changes in membership probabilities or changes in the K regression functions satisfy a stopping

criterion. Support for this amendment can be found in ¶¶ [0083] and [0085] of the specification.

In addition, claim 1 has been amended to recite repeating the calculating, applying, and determining tasks if the changes in membership probabilities or changes in the K regression functions do not satisfy the stopping criterion. Support for this amendment can be found at least in ¶ [0083] of the specification.

It is respectfully submitted that claim 1 is non-obvious over de Smet and Zhang.

To make a determination under 35 U.S.C. § 103, several basic factual inquiries must be performed, including determining the scope and content of the prior art, and ascertaining the differences between the prior art and the claims at issue. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459 (1965). Moreover, as held by the U.S. Supreme Court, it is important to identify a reason that would have prompted a person of ordinary skill in the art to combine reference teachings in the manner that the claimed invention does. *KSR International Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741, 82 U.S.P.Q.2d 1385 (2007).

Here, it is respectfully submitted that the hypothetical combination of de Smet and Zhang does not disclose or hint at applying regression to recalculate the K regression functions based at least on the membership probabilities of the data points. Note that claim 1 specifies that the membership probability for each data point is calculated based on distances between the K regression functions and each data point. There is nothing in the K-means clustering merging technique described in de Smet, or in the KHM clustering described in Zhang, of applying regression to recalculate regression functions based on membership probabilities of data points that are calculated for each data point based on distances between the K regression functions and each data point. Equation (5) of Zhang describes calculating the center point m_k, which does not constitute recalculating K regression functions based at least on membership probabilities of the data points.

In view of the fact that claim 1 also recites repeating the calculating, applying, and determining tasks of claim 1 if the stopping criterion is not satisfied, it is noted that the hypothetical combination of de Smet and Zhang also does not provide any teaching or

hint of calculating distances from each data point to each of the K regression functions, where each K regression function has been recalculated based on membership probabilities of data points.

In view of the foregoing, it is clear that claim 1 is non-obvious in view of de Smet and Zhang.

Independent claims 13 and 25 are allowable over de Smet and Zhang for similar reasons as claim 1.

Independent claim 27 was rejected as obvious over de Smet, Zhang, and Reitmeier. Reitmeier was cited by the Office Action as disclosing a general-purpose computer, which the Office Action stated was not found in de Smet or Zhang. 2/4/2009 Office Action at 11. However, the rejection of the substance of claim 27 is the same as the rejection of claim 1. Therefore, for similar reasons stated above with respect to the rejection of claim 1 over de Smet and Zhang, it is respectfully submitted that the obviousness rejection of claim 27 over de Smet, Zhang, and Reitmeier is also defective.

Dependent claims are allowable for at least the same reasons as corresponding independent claims.

In view of the allowability of base claims, it is respectfully submitted that the obviousness rejections of dependent claims have been overcome.

Allowance of all claims is respectfully requested.

The Commissioner is authorized to charge any additional fees and/or credit any overpayment to Deposit Account No. 08-2025 (200314385-1).

Respectfully submitted,

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